

## AMENDMENTS TO THE CLAIMS

The listing below of the claims will replace all prior versions and listings of claims in the present application:

### **Listing of Claims:**

Claim 1 (currently amended): A method of producing a molybdenum-silicide-based heating element, said method comprising the steps of:

providing powdered molybdenum ~~aluminum silicide~~ aluminosilicide material  $\text{Mo}(\text{Si}_{1-y}\text{Al}_y)_2$ ;  
mixing the powdered molybdenum ~~aluminum silicide~~  $\text{Mo}(\text{Si}_{1-y}\text{Al}_y)_2$  aluminosilicide material with  $\text{SiO}_2$  to provide a heating element material mixture, wherein the  $\text{SiO}_2$  is at least 98% pure, and wherein the heating element material mixture is free of bentonite;

forming a heating element from the heating element material mixture to provide a formed heating element; and

sintering the formed heating element, wherein after sintering the formed heating element contains substantially  $\text{Mo}(\text{Si}_{1-x}\text{Al}_x)_2$  and  $\text{Al}_2\text{O}_3$ , wherein x lies in the range of 0.4 – 0.6, and the heating element includes on its surface an oxide layer consisting essentially of  $\text{Al}_2\text{O}_3$  that does not peel from the surface of the formed heating element under thermal cycling of the formed heating element between room temperature and about 1500°C, so that heating oven contamination in the form of

peeled heating element oxide layer particles from the formed heating element within a heating oven containing the formed heating element is prevented.

Claim 2 (currently amended): A method according to Claim 1, wherein the SiO<sub>2</sub> present in the heating element material mixture is a silicate that does not affect molybdenum silicide crystal lattice symmetry.

Claim 3 (canceled)

Claim 4 (previously presented): A method according to Claim 1, wherein x lies in the range of 0.45 - 0.55.

Claim 5 (currently amended): A method according to Claim 1, including the step of partially substituting at least one of Re and W for molybdenum in the aluminosilicide material Mo(Si<sub>1-x</sub>Al<sub>x</sub>)<sub>2</sub>.

Claim 6 (previously presented): An electrical heating element produced in accordance with the method claimed in claim 1.

Claim 7 (canceled)

Claim 8 (previously presented): A heating element according to Claim 6, wherein x lies in the range of 0.45 - 0.55.

Claim 9 (currently amended): A heating element according to Claim 6, wherein molybdenum in the aluminosilicide material  $Mo(Si_{1-x}Al_x)_2$  is partially replaced with at least one of Re and W.

Claim 10 (previously presented): A method according to claim 2, wherein the silicate is mullite.

Claim 11 (previously presented): A method according to claim 2, wherein the silicate is sillimanite.